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[54] **MICROCALORIMETER X-RAY DETECTORS
WITH X-RAY LENS**

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[52] U.S. Cl. **250/310**

[58] Field of Search 250/310, 306,
250/307, 505.1; 378/43, 145

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[57] **ABSTRACT**

Spectroscopic materials analysis wherein a sample under test is bombarded by electrons in a scanning electron microscope to produce an x-ray emission collected over a large solid angle by a polycapillary lens and focused onto the surface of a microcalorimeter detector. The x-ray lens is used to increase the effective collection area of the microcalorimeter detector used in an x-ray spectrometer. By increasing the collection angle, the time period for x-ray collection is reduced and the detector can be located farther from the x-ray source. The x-ray lens is effective over a broad energy range of x-rays, thus providing compatibility with spectroscopic analysis. The microcalorimeter can be calibrated to compensate for any variations in the transmission efficiency of the x-ray lens.

17 Claims, 1 Drawing Sheet

